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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,359	03/19/2004	Mark H. Englert	226972	9227
23460 7590 06/05/2007 LEYDIG VOIT & MAYER, LTD TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STETSON AVENUE CHICAGO, IL 60601-6731			EXAMINER PHILLIPS, FORREST M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/804,359

**Applicant(s)**

ENGLERT ET AL.

**Examiner**

Forrest M. Phillips

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 and 96-122 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-50 and 96-122 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11-12, 14, 18-20, 27-29, 33-34, 38-40, 96, 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon et al (US20040026002) in view of Saito et al (US4330589).

With respect to claim 1 Weldon discloses a continuous method for preparing an acoustical panel comprising: forming a mixture comprising water, foaming agent, and calcined gypsum (refer to tables and abstract); casting the mixture in a continuous ribbon (paragraph 25); maintaining the ribbon under conditions sufficient for the calcined gypsum to form an interlocking matrix of gypsum (abstract); cutting the ribbon to form wet acoustical panel precursor (paragraph 6); drying the wet panel precursor to form acoustical panel (paragraph 6).

While Weldon does not explicitly disclose forming a panel having a Normal Incident Sound Absorption of at least 0.32, according to a modified ASTM E 1050-98. It would have been obvious to one of ordinary skill in the art to design the panel to have any given absorption characteristic.

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It has been held that discovering an optimum value of a results effective variable involves only routine skill in the art. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Weldon does not expressly disclose adding the foaming agent to the adding the foaming agent to the calcined gypsum mixture.

Saito discloses in the production of a gypsum board (Column 5 lines 20-45 Example 2) adding a foaming agent to a mixture of calcined gypsum. Saito further discloses (Column 1 lines 5-10) having a gypsum board that is concerned with sound transmission and this being achieved through the foamed characteristics of the board.

With respect to claim 11 Weldon further discloses wherein the mixture comprises a binder (paragraph 35).

With respect to claim 12 Weldon further discloses wherein the binder is selected from the group consisting of starch, latex, and combinations thereof (paragraph 35).

With respect to claim 14 Weldon further discloses wherein the starch is migrating (35).

With respect to claim 18 Weldon does not require the use of mineral wool in the production of the panel, as such it is understood by examiner that the teachings of Weldon would provide a mixture that is substantially free of mineral wool.

With respect to claim 19 Weldon further discloses wherein a face sheet is applied on the mixture (abstract).

With respect to claim 20 Weldon discloses the invention as claimed except for wherein the amount of calcined gypsum is about 50% to about 95% by weight of the

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solids content of the mixture. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select such a value for the calcined gypsum content, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claim 27 Weldon further discloses wherein the mixture comprises an accelerator (paragraph 37).

With respect to claim 28 Weldon discloses the use of milled down calcium dehydrate in the mixture (paragraph 47). While not specifying the use of it as an accelerator it would have been obvious to one of ordinary skill in the art that its inclusion into the mixture would have constituted an accelerator.

With respect to claim 29 Weldon discloses the invention as claimed except wherein the amount of accelerator used in forming the mixture is from about 1% to about 15% by weight of the solids content of the mixture. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select such a percentage of accelerator, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claim 33 Weldon as modified discloses the invention as claimed except wherein the ribbon before drying has a maximum density of about 53 pounds per cubic foot. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select such a maximum density, since it has been held that

where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 34 and 106 Weldon as modified discloses the invention as claimed except wherein the weight ration of water to calcined gypsum in the mixture is from about 0.5:1 to about 1.5:1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select such a ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claim 38 Weldon as modified discloses wherein the mixture is cast directly or indirectly onto a backing sheet (abstract).

With respect to claim 39 Weldon as modified further discloses wherein the mixture for forming the acoustical layer is cast directly onto the backing sheet (abstract).

With respect to claim 40 Weldon further discloses wherein the backing sheet is formed from a material select from the claimed group (paragraph 26).

With respect to claim 96 Weldon as modified discloses the invention as claimed except wherein the acoustical panel has a density of from about 12 pounds per cubic foot to about 20 pounds per cubic foot. It would have been obvious to one of ordinary skill in the art to select such a density as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 2-6,8-10,15-17,97-101,103-105,107-109,111-112 rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view Saito and further in view of Baig (US5922447).

With respect to claims 2 and 97 Weldon as modified discloses the invention as claimed except wherein the fiber is cellulosic. (paragraph 39)

Baig discloses a gypsum mixture comprising cellulosic fiber (column 2 line 29).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Baig to include a cellulosic fiber with the method of Weldon.

The motivation would have been cellulosic fiber binds well with starches and is readily available.

With respect to claims 3 and 98 Baig further discloses wherein the fiber is paper fiber (column 4 lines 15-27).

With respect to claims 4 and 99 Weldon as modified discloses the invention as claimed except wherein the amount of cellulosic fiber is from about 1% to about 12% by weight of the solids content of the mixture. It would have been obvious to one of ordinary skill in the art to select such a percentage of fiber, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 5 and 100 Weldon as modified discloses the invention as claimed except wherein the fiber has an average length of about less than about 2 mm. It would have been obvious to one of ordinary skill in the art to select such a length of fiber since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 6 , and 101 Baig further discloses wherein the mixture comprises a light weight aggregate (column 2 lines 5-15).

With respect to claims 8 and 103 Weldon as modified discloses the invention as claimed except wherein the lightweight aggregate has an average particle size of from about 0.5 mm to about 5mm. It would have been obvious to one of ordinary skill in the art to select such a size of aggregate, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 9 and 104 Weldon as modified discloses the invention as claimed except wherein the lightweight aggregate has a bulk density of from about 02. pounds per cubic foot to about 0.3 pounds per cubic foot. It would have been obvious to one of ordinary skill in the art to select an aggregate with such a density, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.



With respect to claim 10 and 105 Weldon as modified discloses the invention as claimed except wherein the amount of lightweight aggregate is from about 0.2% to about 35% by weight of the solids content in the mixture. It would have been obvious to one of ordinary skill in the art to select such a percentage of lightweight aggregate to combine with the mixture, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 107, 108 and 109 Baig discloses as demonstrated above wherein the mixture comprises cellulosic fiber, paper fiber, and light weight aggregate and the obviousness of selected any desired length of fiber.

With respect to claims 111 and 112 Examiner considers the selected ranges to have been obvious to one of ordinary skill in the art. See above citation of In re Aller.

Claims 7, 102, 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito and Baig as applied to claims 6 and 101 above, and further in view of Derusco et al (US2004/0241271).

With respect to claims 7 and 102 Weldon as modified discloses the invention as claimed except wherein the lightweight aggregate is expanded poly styrene.

Derusco discloses (paragraph 102) the interchangeability of expanded polystyrene and perlite as lightweight aggregates in the manufacture of Gypsum boards.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Derusco with the method of Weldon in view of Braig

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to provide a light weight aggregate that is readily available, inexpensive and easily integrated into the production.

Examiner considers the limitations of claim 110 to be met as well. See above rejections.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito and in further view of WO 02/098646.

With respect to claim 13 Weldon as modified discloses the invention as claimed except for wherein the binder is a latex selected from the group consisting of an acrylic compound, polyvinyl acetate, styrene butadiene, and combinations thereof.

The WIPO publication discloses (abstract) the use of a latex selected from the group consisting of an acrylic compound, polyvinyl acetate, styrene butadiene, and combinations thereof in the production of a gypsum board .

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of The WIPO publication to use a latex as a binder with the method of Weldon to provide a binder that would be most suitable with the other selected components.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito in further view of Sethuraman et al. (US 6783587).

With respect to claim 21 Weldon as modified discloses the invention as claimed except the mixture comprises a water reducing agent.

Sethuraman discloses wherein the mixture comprises a water reducing agent (column 9 lines 19-23).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Sethuraman to use a water reducing agent in a gypsum mixture with the method of Weldon to "aid in cutting costs of drying" (column 9 line 25).

With respect to claim 22 Serthuraman further discloses wherein the water reducing agent is selected from the group consisting of naphthalene sulfonates, polycarboxylate compounds, melamine compounds, and combinations thereof (column 9 lines 30-38).

With respect to claim 23 Weldon as modified discloses the invention as claimed except wherein the amount of water reducing agent is from about 0.2% to about 1.5% by weight of the solids content in the mixture. It would have been obvious to one of ordinary skill in the art to select such a percentage of water reducing agent, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito in further view of Savoly et al. (US5158612).

With respect to claim 24 and 25 Weldon as modified discloses the invention as claimed except for wherein the foaming agent forms foam void open cell.

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Savoly discloses the use of a foaming agent characterized by the formula

$[\text{CH}_3(\text{CH}_2)_x\text{CH}_2(\text{OCH}_2\text{CH}_2)_y\text{OSO}_3]^\ominus \text{M}^+$ , which is of the set forming foam void open cells (column 2 formula (II)).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Savoly to use a foaming agent which forms foam void open cells with the method of Weldon, the motivation being that these types of foaming agents exhibit more desirable characteristics than other foaming agents (abstract).

With respect to claim 26 Weldon as modified discloses the invention as claimed except wherein the amount of foaming agent used in forming the mixture is from about 0.005% to about 0.4% by weight of the solids content of the mixture. It would have been obvious to one of ordinary skill in the art to select such a percentage of foaming agent, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weoldon in view of Saito in further view of Derusco.

With respect to claims 30 and 31 Weldon as modified discloses the invention as claimed except wherein the mixture comprises an enhancing material selected from the group consisting of an ammonium polyphosphate having 500-3000 repeating phosphate

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units, a trimetaphosphate compound, a tetrametaphosphate compound, a hexametaphosphate compound, and combinations thereof.

Derusco discloses wherein the enhancing material is sodium tetrametaphosphate (table which is part of paragraph 104).

With respect to claim 32 Weldon as modified discloses the invention as claimed except wherein the enhancing material is from about 0.004% to about 2% by weight of the solids content of the mixture. It would have been obvious to one of ordinary skill in the art to select such a percentage of enhancing material, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito in further view of applicant's admitted prior art (paragraph 24 of specification).

With respect to claim 35 Weldon as modified discloses the invention as claimed except further comprising applying a forming plate or forming rollers to the mixture as it is cast in the continuous ribbon.

Paragraph 24 of the specification however discloses that this type of procedure is conventional.

At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize a conventional procedure of applying a forming plate or forming rollers with the method of Weldon to form the board.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito and applicant admitted prior art as applied to claim 35 above, and further in view of EP1088632.

With respect to claim 36 Weldon as modified discloses the invention as claimed except wherein the forming plate is a fluidization membrane.

As understood by examiner applicant admits in paragraph 25 that the fluidization membrane is a known structure manufactured by another.

EP 1088632 discloses (paragraph 60) that it is known to use high pressure water to form gypsum boards, in the same manner proposed by applicant.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of EP 1088632 to use water to form gypsum boards with the method of Weldon in view of applicant admitted prior art in order to form the face also, the motivation being that this type of operation is well known and water is easily attained.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito and applicants admitted prior art as applied to claim 35 above, and further in view of Derusco.

Weldon as modified discloses the invention as claimed except wherein the forming plate is a vibrating plate.

Duresco discloses wherein the forming plate is a vibrating plate (vibrataor 42 attached to forming plate also see paragraph 95).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Derusco to use a vibrating plate as the forming plate as it is known that a vibrating plate will allow the material to settle in a uniform manner.

Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldonivo Saito in further view of White (US4327146).

With respect to claim 41 Weldonas modified discloses the invention as claimed except for further comprising applying a densified layer precursor comprising calcined gypsum and water on the backing sheet.

White discloses applying a densified layer precursor, comprising calcined gypsum and water on the backing sheet (column 1 lines 5-10).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of White to have a higher density layer of gypsum with the method of Weldon for the purpose of having a better gypsum to backing sheet bond (column 1 lines 35-37).

With respect to claim 42 Weldon as modified discloses the invention as claimed except wherein the densified layer when cured has a density of at least about 35 pounds per cubic foot. It would have been obvious to one of ordinary skill in the art to select such a density since it has been held that where the general conditions of a

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claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Saito and White as applied to claim 41 above, and further in view of McLarty et al. (US2004/0152379).

With respect to claim 43 Weldon as modified discloses the invention as claimed except further comprising applying a scrim layer on the densified layer.

McLarty discloses applying a scrim layer to a layer of gypsum (paragraph 38).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of McLarty to apply a scrim layer to a layer of gypsum with the densified layer of the method of Weldon in view of White to provide an added degree of strength necessary in cases when the face sheet burns away, also when a face sheet is not included (paragraph 18).

With respect to claim 44 McLarty further discloses wherein the scrim layer is selected from the group consisting of paper, non-woven fiberglass, woven fiberglass, synthetic fiber and combinations thereof (paragraph 24).

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Delcoigne et al (US4288263).

With respect to claim 45 Weldon discloses a continuous method for preparing acoustical panel comprising:

Providing a backsheet (abstract); forming a first mixture comprising (a) water, (b) calcined gypsum, and (c) foaming agent (paragraph 6), and optionally one or more of



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the following: cellulosic fiber, lightweight aggregate, binder (paragraph 35), accelerator (paragraph 37), water reducing agent, and enhancing material selected from the group consisting of an ammonium polyphosphate having 500-3000 repeating phosphate units, a trimetaphosphate compound, a tetrametaphosphate compound, a hexametaphosphate compound, and combinations thereof;

maintaining conditions sufficient for the calcined gypsum to form an interlocking matrix of set gypsum (abstract);

cutting the ribbon to form wet acoustical panel precursor (paragraph 6);

drying the wet panel precursor to form an acoustical panel (paragraph 6).

Weldon does not disclose forming a second mixture; casting the second mixture onto the backing sheet to form a densified layer precursor; casting the first mixture as an acoustical layer precursor onto the densified layer.

Delcoigne discloses forming multiple mixtures comprising water and calcined gypsum and optionally one or more of the following ingredients: cellulosic fiber, lightweight aggregate, binder, accelerator, water reducing agent, and an enhancing material selected from the group consisting of ammonium polyphosphate having 500-3000 repeating phosphate units, a trimetaphosphate compound, a tetrametaphosphate compound; a hexametaphosphate compound, and combinations thereof; maintaining the ribbon under conditions sufficient for the calcined gypsum in each of the densified layer precursor and the acoustical layer precursor to form an interlocking matrix set of gypsum;

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Casting a second mixture onto the backing sheet to form a densified layer precursor (118 in figure 12) (column 9 line 59- column 10 line 3 & column 12 lines 19-28);

Casting the first mixture onto the densified layer precursor to form a continuous ribbon (116 in figure 12) (column 9 line 59-column 10 line 3 & column 12 lines 19-28);

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Delcoigne with the method of Weldon to provide a densified outer layer to provide greater adhesion to a paper backing sheet.

Weldon in view of Delcoigne discloses the invention as claimed except wherein the acoustical panel has a normal incident sound absorption of at least about 0.32, according to a modified ASTM E 1050-98. It would have been obvious to one of ordinary skill in the art to select such an acoustic parameter as it has been held that discovering an optimum value of a results effective variable involves only routine skill in the art. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 46 Delcoigne further discloses further comprising applying a scrim layer (122 in figure 12) onto the densified layer precursor (column 12 lines 19-28).

Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Delcoigne as applied to claim 46 above, and further in view of McLarty.

With respect to claim 47 Weldon in view of Delcoigne discloses the invention as claimed except that scrim layer is selected from the group consisting of paper, non-woven fiber glass, woven fiberglass, synthetic fiber and combinations there of.

McLarty discloses wherein a scrim layer is selected from the group consisting of paper, non-woven fiberglass, woven fiberglass, synthetic fiber, and combinations thereof (paragraph 25).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of McLarty to use such a material for the scrim layer with the method of Weldon in view of Delcoigne due to fiberglass's ability to withstand high temperatures.

Claim 48 rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Delcoigne as applied to claim 45 above, and further in view of Baig, Sethuraman and Derusco.

With respect to claim 48 All the references teach the use of water, and calcined gypsum.

Weldon discloses the use of a binder (paragraph 35); foaming agent (paragraph 22); and an accelerator (paragraph 37)

Weldon does not disclose the use of cellulosic fibers, lightweight aggregate, a water reducing agent or enhancing material.

Baig discloses the use of cellulosic fiber (column 2 line 29); a light weight aggregate (column 2 lines 5-15).

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At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Baig to use a lightweight aggregate and cellulosic fibers in the method of Weldon to provide a means to lighten the board in the case of the aggregate and to use fibers which bind well with the starch of the method of Weldon.

Weldon in view of Baig does not disclose the use of a water reducing agent or an enhancing material.

Sethuraman discloses the use of a water reducing agent (column 9 line 25).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Sethuraman to use a water reducing agent with the method of Weldon in view of Baig to "reduce the costs of drying" (column 9 line 25).

Weldon in view of Baig and Sethuraman does not disclose an enhancing material.

Duresco discloses the use of an enhancing material in the manufacture of a gypsum product (paragraph 104).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Duresco to use an enhancing material with the method of Weldon in view of Baig and Sethuraman to provide dimensional stability to the board.

The above combination of references does not teach the specific weights of the components as claimed, however it has been held that where the general conditions of a

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claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Delcoigne as applied to claim 45 above, and further in view of Baig and Derusco.

With respect to claim 49 Weldon in view of Delcoigne discloses the invention as claimed except the fiber is cellulosic and paper fiber, and the use of a lightweight aggregate that is expanded polystyrene.

Baig discloses the use of paper fibers in the manufacture of a gypsum product (column 2 line 29 and column 4 lines 15-27).

At the time of the invention it would have been obvious to one of ordinary skill in the art to use paper fibers as taught by Baig in the method of Weldon as paper fibers would be strongly bound with the starch in the slurry.

Derusco teaches the use of expanded polystyrene as a lightweight aggregate in the production of a gypsum product (paragraph 102).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Derusco to use expanded polystyrene as a lightweight aggregate with the method of Weldon for the purpose of a light weight inexpensive filler material to cut down on the mass and expense of the gypsum product.

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of Delcoigne as applied to claim 45 above, and further in view of applicant admitted prior art (specification paragraph 36).

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Weldon in view of White discloses the invention as claimed except wherein the second mixture further comprises foaming agent, the method further comprising beating the second mixture to minimize formation of foam voids.

In applicant's specification paragraph 36 it is stated that it is known to use edge mixers to beat out foam from the mixture to generate densified portions of wall boards.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the known process of beating foam out of a gypsum mixture with the teachings of Weldon in view of White to have a densified layer in a gypsum board.

The motivation for doing so would have been to use existing components and thus reduce costs of manufacture.

Examiner in light of applicant's remarks regarding claims 113-122 considers that as claims 45, 2-11 and 34 have been explicitly dealt with above these claims stand rejected as being obvious combinations of those claim limitations.

### ***Response to Arguments***

Applicant's arguments filed 3/26/07 have been fully considered but they are not persuasive. Applicant argues that while the examiner has shown the limitations of the claims are known to those familiar with the art of Gypsum board making, this art is patentably distinguishable from the art of manufacture of acoustic panels. Examiner disagrees.

Among other references Examiner wished to draw attention to Saito (US4330589), Seki (US20060162839) and Yu (US2002/0112651) as demonstrating that

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gypsum wall boards act as acoustic panels. Saito for instant in the first column, lines 5-10 demonstrates this.

It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Examiner considers that even if the process of manufacturing an acoustic panel is not precisely the same as that of making a wall board, it would have been obvious to one of ordinary skill in either of the two arts to look to the other for known techniques to manufacture a gypsum product.

### ***Conclusion***

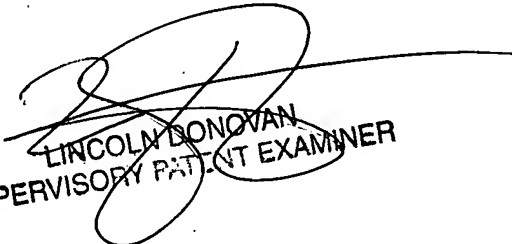
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forrest M. Phillips whose telephone number is 5712729020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 5712721988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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FP

  
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SUPERVISORY PATENT EXAMINER